

On-Line Course Development: Engaging and Retaining Students

Benita G. Bruster: Austin Peay State University

As the number of on-line classes and the demand for on-line education continues to sky-rocket, it is critical that course developers and university faculty have the skills to effectively design curricula, to develop engaging learning opportunities, and to create responsive courses that meet individual student needs. This paper details three essential elements, “Relationships, Rigor, and Responsiveness” (R3), in designing effective on-line courses: 1) building student and faculty relationships, 2) ensuring rigorous course content, and 3) developing a culture of responsiveness to students. An overview of these three essential elements are aligned to effective on-line course development, as well as course evaluation, with examples and guidance for incorporating these elements.

Enrollment in on-line courses continues to rise. According to a ten year study from the Babson Survey Research Group and the College Board (2012), the number of students taking at least one class on line surpassed 6.7 million. However, by 2019, it is estimated that approximately one-half of all college classes will have an on-line component according to the e-Learning Statistics Market Survey (2014). The continued growth in college enrollment of non-traditional students will be in record numbers by 2019, as reported by the National Center of Educational Statistics (2009). As growth in on-line education continues to sky-rocket; it is critical that university faculty and course developers have the skills and knowledge necessary to develop a virtual learning environment that engages and retains students.

The on-line learning environment consists of both the academic expectations for the course, as well as the social aspects of the virtual classroom. In order to effectively engage and retain students, a virtual classroom environment must be established that promotes active student involvement, both academically and socially. This paper outlines three essential components when

developing on-line learning environments: 1) Relationships, 2) Rigor, and 3) Responsiveness” (R3), to ensure that students enrolled in on-line courses are engaged socially and challenged academically, thereby, increasing the probability of retention.

Relationships: Establishing and Maintaining Virtual Consecutiveness

Establishing, building, and maintaining relationships with students in an on-line environment can be challenging for faculty. In many instances, adult learners tend to isolate themselves and find it difficult to connect with other students in a virtual environment. Swanson, Hutkin, Babb, and Howell (2010) reported on social collaborative connections to assist students with on-line interactions. Faculty must thoughtfully take pro-active measures in on-line course development to build in opportunities for students to cultivate relationships with their peers in the course and with the faculty member. Furthermore, Watson, McIntyre, and Author (2010), affirms the impact of interpersonal connections and relationships between students

and faculty are relevant to levels of trust and the effectiveness with on-line experiences.

On-line courses need components which help build relationships from the on-set. These components need to build trust, thus establishing open lines of communication that foster student success and retention. Planning for social interactions during course design is critical to enriching the social and educational experience for students. Techniques to plan for social and collaborative experiences throughout the course can be accomplished by building introduction exercises, assigning collaborative group or paring projects, establishing interactive discussion boards, scheduling web-based synchronous conferences, and designing culminating reflection projects.

Garrison, Anderson, and Archer (1999) described three elements for successful on-line facilitation; cognitive presence, social presence, and teaching presence. Social presence is described as the degree to which a person comprehends another person is real. In course development, there are ways to design courses that can replicate a sense of realism in a virtual environment. For instance, during the introductory session of the course provide a welcoming video message from the instructor. Allowing students the opportunity to learn about the instructor teaching the course builds trust and develops social connections. In the initial discussion board, students should introduce themselves to their peers in the course. Encourage students to share personal and professional aspects of their lives. In addition, during the first week of the class, schedule a collaborative interactive session so that students can interact with the instructor, thus making personal connections both with faculty and peers through an open question and answer session. By making connections both personal and professional, the sense of social presence will develop.

Establishing group projects is another preferred element of course design; this allows for peer-to-peer connections to be established. Allowing students to work together establishes a sense of belonging and the ability to develop social networks. Students learn from and with each other during these collaborative assignments. In technology management systems such as Desire to Learn and Blackboard, there are grouping tools which allow for random or faculty assignment of students into groups. Assignments which actively engage students and allow them to experience interactions with peers will build professional trust and social presence. Not only is social interaction important for student engagement, student retention is also positively impacted when social interaction is the norm.

Rigor of Course Content

Designing course content with academic rigor and relevant pedagogy is the second essential component to effective on-line courses development. Naidu (2011) posits that retention of on-line students mandates that students establish much needed technology, research skills, and content knowledge needed for success. In addition, Partlow and Gibbs (2003) believe that internet courses should use the constructivist model which results in interactive learning communities and authentic learning activities. This model provides students the opportunity to experience meaningful learning with guidance from the instructor, resulting in students working together and establishing a meaningful working context. Learners' active engagement in content results in a social, as well as a cognitive connection. Thus, Garrison, Anderson, and Archer (1999) suggested a teaching and cognitive presence be visible in on-line courses. A "teaching presence" encompasses the social and cognitive elements of course design while "cognitive presence" contains elements for critical thinking and course academic rigor.

Critical thinking is the ability to analyze, evaluate, and interpret thoughts, free from bias and prejudice. Many of the noted experts involved with critical thinking suggested that thinking is dynamic and continually changing (Argyris, 1992; Brookfield, 1995; Tennyson, 1992). For example, all thinking is dependent upon our experiences, the learning environments, as well as our subjective thoughts, feelings, and beliefs. Scriven and Paul (1996) defined critical thinking as an intellectually disciplined process. “Critical thinking is the art of analyzing and evaluating thinking with a view to improve it” (Elder and Paul, 2008, p.2). Critical thinking embedded in learning new content allows students to summarize, predict, and clarify their understandings. It also enables self-monitoring by utilizing new information in ways that affects current or future actions. By effectively weaving critical thinking into on-line learning events, professional growth and real world application occurs. The integration of critical thinking skills into on-line courses is essential to providing intellectually challenging and relevant learning experiences for students (Muirhead, 2002). Innately we do not think critically, but as thought processes are actively identified and practiced, it is possible to influence and develop critical thinking skills by carefully developing rigorous learning experiences.

Tennyson (1992) indicated that contextual learning is a progression for students. First students move through the thought process, from what, to how, and then finally why. Critical thinking is putting into practice, making connections, and differentiating between the “how” and the “why” of what we do as teachers. Ultimately being able to integrate and construct new habits of thinking will result in critical thought evolving into a deeper and more meaningful process. Students enrolled in on-line courses containing the elements of critical thinking will be challenged to effectively analyze materials across a variety of virtual multi-media

resources moving them through the processes required to think critically.

Rigor and Relevance

During course development, instructors must consider varied course design models. One course design model to consider is The Rigor and Relevance Framework, (Table 1), developed by the staff from the International Center for Leadership in Education (2005). This model can transform traditional course content into real world experiences and problem-solving opportunities for students in on-line courses.

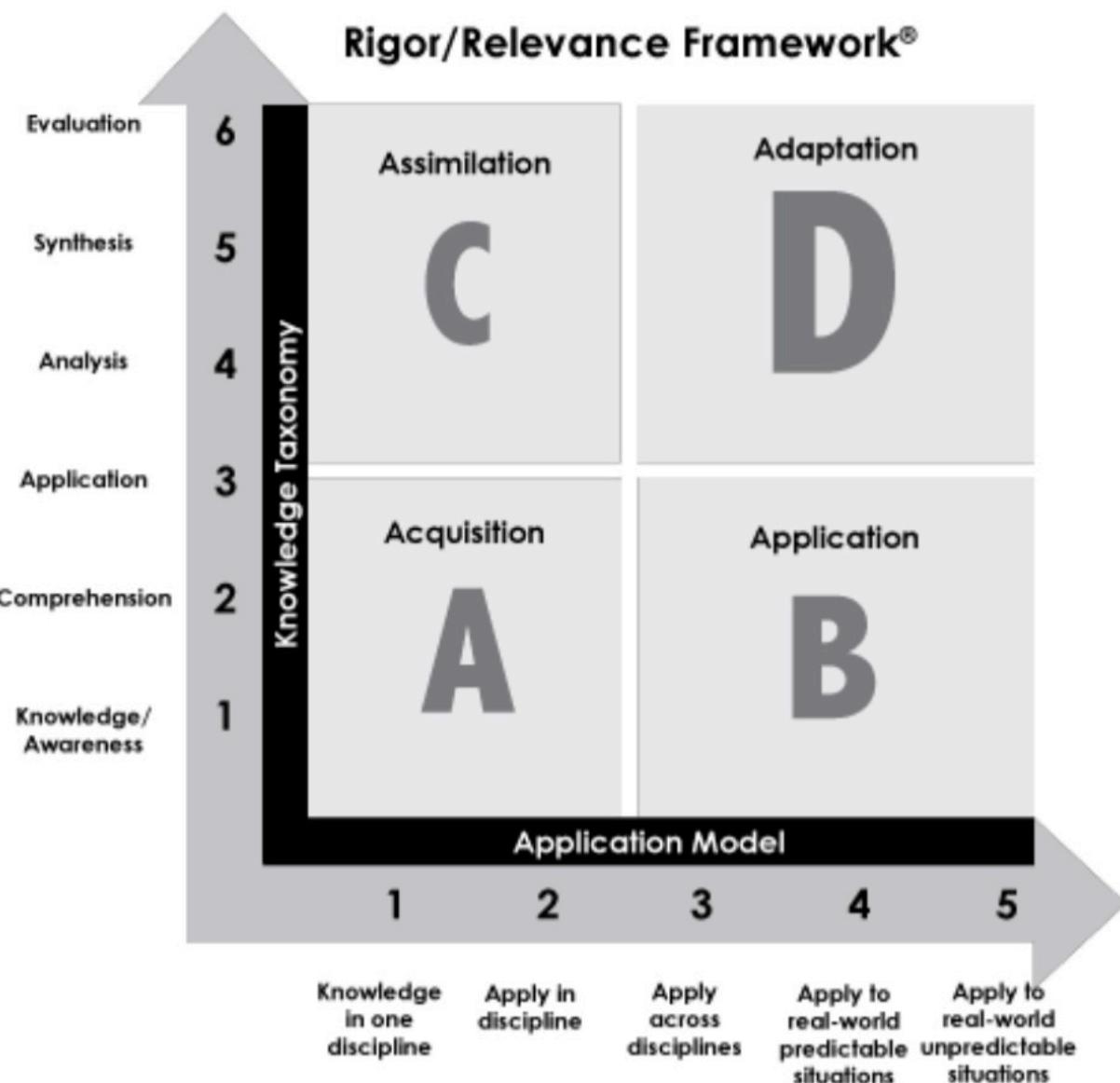
When developing course content and applying the constructs from the Rigor and Relevance Framework, quadrants A through D, the work shifts from faculty to student. Coupled with the shift in work, there is also a transition in the traditional knowledge hierarchy from descriptive knowledge level to synthesis and evaluation. An example of course content development that aligns to each quadrant is detailed below and can be used to assist with course development and course-evaluation.

When developing course content and applying the constructs from the Rigor and Relevance Framework, quadrants A through D, the work shifts from faculty to student. Coupled with the shift in work, there is also a transition in the traditional knowledge hierarchy from descriptive knowledge level to synthesis and evaluation. An example of course content development that aligns to each quadrant is detailed below and can be used to assist with course development and course-evaluation.

Quadrant A: Acquisition

As faculty apply information from Quadrant A, some basic understandings of student learning apply. Students gather and store bits of knowledge and information and are primarily expected to remember or understand the basic knowledge and

Table 2- Rigor/Relevance Framework, International Center for Leadership (2011)



content of the course. In this quadrant, the faculty is primarily doing the work. The course content is centered on one discipline and information is presented to students in an isolated context with extremely limited applications. In many online courses, this may be where the instruction stops which leaves students feeling isolated. The human factor is absent in quadrant A, the teacher is working to assign tasks to the students and grade student work. Students are isolated from other students in the course and there are limited opportunities for interaction with the faculty or

other students, with limited opportunities to think critically or apply new knowledge.

Quadrant B-Application

In Quadrant B, students use acquired knowledge to solve problems, design solutions, and complete work. Students operating in this quadrant must have the knowledge and skills of the content form quadrant A, but additionally they must have the opportunity to use the information in meaningful ways. Course content at this level

allows students the chance to apply knowledge to real world situations. The work in this quadrant shifts from the teacher to the student, and students are able to engage in an active way with the content in predictable and unpredictable real world scenarios.

On-line course content at quadrant B provides students with opportunities to think critically and problem-solve. Discussion board prompts or questions at this level generally engage students in conversations with other students in the course. Students are able to apply knowledge obtained from quadrant A to solve real-world situations. Course content in quadrant B involves successful problem-solving and decision-making, critical to learning.

Quadrant C-Assimilation

According to Piaget (1967), learning is an active process that will result in change. Students must either assimilate or accommodate new information. In order to assimilate new information, students must find the information meaningful, relevant, and useful to their world. In Quadrant C, students are able to extend and refine their acquired knowledge and use new information in practical ways and find course content meaningful. They can effectively use new knowledge automatically, routinely analyze content to solve problems, and create solutions in constant situations. Course curriculum in this quadrant allows for the analysis, synthesis and evaluation of information. On-line course activities provide students multiple activities to think and apply information in their discipline.

Quadrant C experiences allows students to extend and refine their acquired knowledge. They can effectively use new knowledge automatically, routinely analyze content to solve problems, and create solutions in constant situations. Students are able to extend their knowledge and use new information in practical ways. Course curriculum in this quadrant allows for the analysis, synthesis

and evaluation of information. On-line course activities provide students multiple activities to think and apply information in their discipline. Instruction at this level is teacher centered with all components for problem-solving initiated by the teacher.

Quadrant D-Adaptation

Students have opportunities to think in complex ways and to apply knowledge and skills in real world predictable and unpredictable applications with course content designed with the elements of Quadrant D. According to McNulty and Quaglia (2008), “Learning in Quadrant D is demanding and requires students to apply their thinking and knowledge in complex ways to solve difficult problems” (p. 3). Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skills to create solutions and take action which develops their understanding. “The student’s ability to apply high-rigor knowledge in a relevant, real world setting needs to be the true finish line; instead, it has become an afterthought” (Daggett, 2005, p. 1). On-line course activities at this level are complex and rigorous but may not necessarily be highly difficult. Students must have an in-depth understanding of the content and the objectives within the standard to be a successful problem-solver in Quadrant D. Well-designed learning opportunities at this level present students with opportunities to work together to solve problems that may involve changing or unpredictable elements.

Responsiveness to Students

Responsiveness to students refers to responding socially and academically to the needs of students. Responsiveness is addressed in three areas: academic feedback on course work, selecting appropriate assessments, and meeting diverse students’ needs.

Prompt and specific feedback to students not only guides students during current learning but will promote further learning and success. Providing students with authentic, specific, and prompt feedback guides learners in constructing meaning, a professed goal of higher education (Garrison et al., 1999, Bandura, 1986). Feedback must meet the individual needs of students and help students improve the quality of their work. Constructive feedback must be positive, specific outlining the points for correction, and help students obtain the objective(s) set for the assignment. According to Hattie (2012) after a meta-analysis on more than 900 studies found that academic feedback has substantial positive influences on student learning across all content areas.

Assessing students learning of on-line content is difficult, not only when determining the appropriate assessment to use, but also the question of authenticity comes into question. As reported by Rovai (2000) issues of reliability and validity are continual concerns for faculty, as well as security and authentication issues. Using multiple means of assessment, both formative and summative, throughout an on-line course is critical in guiding student learning and being responsive to students. One method to assess individually, is to use an activity based performance learning environment. This allows instructors multiple ways to access learning. For example, using portfolio assessment coupled with active learning opportunities, provides instructors opportunities to optimize responsiveness to assessments, as well as provides students opportunities to incorporate active and relevant learning experiences into projects. Individual student portfolios can be developed in an on-line environment. Students have opportunities to upload multiple artifacts into individual portfolios, whereby, instructors can respond and give corrective feedback and can examine growth over time for individual students.

Academic responsiveness also refers to accessible and inclusive content for all students. On-line course developers must also consider students' special learning needs. Meeting the individual special needs of diverse learners is critical to responsiveness and must adhere to the mandatory requirements for on-line course developments according to Section 508 of the Rehabilitation Act § 1194.21 and § 1194.22, 2000 (2000). This Rehabilitation Act essentially demands equal and quality access for all students in on-line courses and must be followed by course developers to ensure accessibility requirements. Some of the required items in on-line course developments are consistent font size and color, limitations on clip art with tags applied to any additional art, tables, or charts. Additionally, any videos added to courses must have dialogue transcriptions for students with visual and/or auditory learning needs. A detailed list of requirements are outlined in the Rehabilitation Act listed above.

Conclusion

On-line education continues to grow and holds an exciting future for university enrollment, instructor opportunities, both in teaching and course development, and for student learners of all ages. On-line learning must engage students and provide a reliable and valid means of accessing learning. As faculty and course developers work to design on-line courses, it is critical that the elements of building relationships between faculty and students, embedding rigorous and relevant content, and providing academic and social responsiveness be included to ensure academic success and engagement for students.

References

- Argyris, C. (1992). *Reasoning, learning, and action: Individual and organizational*. San Francisco, CA: Jossey-Bass.

- Babson Survey Research Group and College Board. (2012). Retrieved from <http://www.babson.edu/news-events/babson-news/pages/130107-2012-survey-of-online-learning-results.aspx>
- Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.
- Brookfield, S. (1995). Becoming a critically reflective teacher. San Francisco, CA: Jossey-Bass.
- Daggett, W. (2005). Achieving academic excellence through rigor and relevance. Retrieved from http://www.daggett.com/pdf/Academic_Excellence.pdf
- Elder, L., & Paul, R. (2008). The miniature guide to critical thinking, concepts and tools. Dillon Beach, CA: The Foundation of Critical Thinking Press.
- Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2), 87-105.
- Hattie, J. (2012). Know thy impact. *Educational Leadership*, 70(1), 18-23.
- McNulty, R. J., & Quaglia, R. J. (2008). Rigor, relevance and relationships. *The School Administrator* 8, 1-7. Retrieved from <http://www.aasa.org/publications/saarticledetail.cfm?ItemNumber=9330>
- Muirhead, B. (2002, November). Integrating critical thinking into online classes. *International Journal of Distance Learning*. Retrieved from http://www.itdl.org/journal/jun_05/article01.htm
- Naidu, S. (2011). Editorial. *Distance Education*, 32(3), 303-305. doi: 10.1080/01587919.2011.621196
- Pappas, C. (2013, December 1). Top 10 e-learning statistics for 2014 you need to know. Retrieved from <http://elearningindustry.com/top-10-e-learning-statistics-for-2014-you-need-to-know>
- Partlow, K. M., & Gibbs, W. J. (2003). Indicators of constructivist principles in internet-based courses. *Journal of Computing in Higher Education*, 14(2), 68-97.
- Piaget, J. (1967). Six psychological studies. London University Press: London.
- Rovai, A. P. (2000). Online and traditional assessments: What is the difference? *Internet and Higher Education*, 3(3), 141-151.
- Scriven, M., & Paul R. (1996). Defining critical thinking: A draft statement for the National Council for Excellence in Critical Thinking. [On-line]. Retrieved from http://www.crescentlife.com/articles/education/critical_thinking.htmSection 504 of the Rehabilitation Act of 2000 § 1194.21 and § 1194.22 (2000).
- Section 504 of the Rehabilitation Act of 2000 § 1194.21 and § 1194.22 (2000). Retrieved from <http://www.section508.gov/content/learn/standards/quick-reference-guide#1194.21.22>
- Swanson, A., Hutkin, R., Babb, D., & Howell, S. (2010, September). Establishing the best practices for social interaction and e-connectivity in online higher education classes. Doctorial dissertation, University of Phoenix, Arizona. Publication Number: 3525517. Retrieved from <http://gradworks.umi.com/3522517.pdf>
- Tennyson, R. D. (1992). An educational learning theory linked to instructional design. *Educational Technology*, 32(1), 36-41.
- U.S. Department of Education, National Center for Education Statistics. (2002). NCES Statistical Standards (NCES 2003-601). Washington, DC.
- Watson, K., McIntyre, S., & McArthur, I. (2010). Trust and relationship building: Critical skills for the future of design education in online contexts. *Iridescent: Icograda Journal of Design Research*, 1(1), 22-29.

Author's Note

Dr. Benita Bruster is an Associate Professor at Austin Peay State University in Clarksville, Tennessee, and specializes in Literacy and Reading.